July 9, 1935. L. V. ARONSON 2,007,629

FLAME PRODUCING MECHANISM AND ASSOCIATED CONTAINER

Filed Feb. 3, 1930 2 Sheets-Sheet 1

Fig. 1.

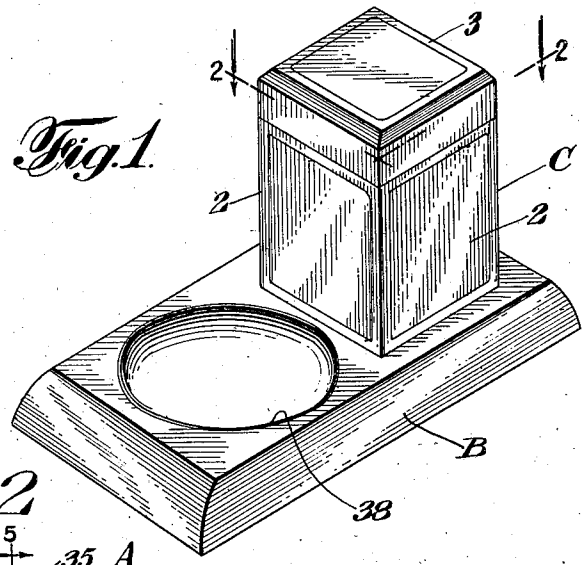


Fig. 2.

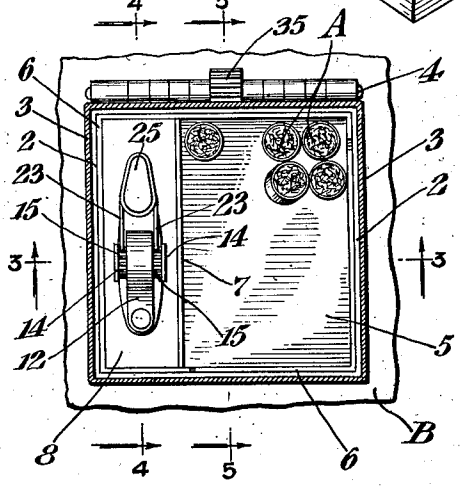


Fig. 3.

INVENTOR
Louis V. Aronson
BY
Ward, Crosby & Neal
ATTORNEYS

July 9, 1935. L. V. ARONSON 2,007,629

FLAME PRODUCING MECHANISM AND ASSOCIATED CONTAINER

Filed Feb. 3, 1930 2 Sheets-Sheet 2

Fig. 4.

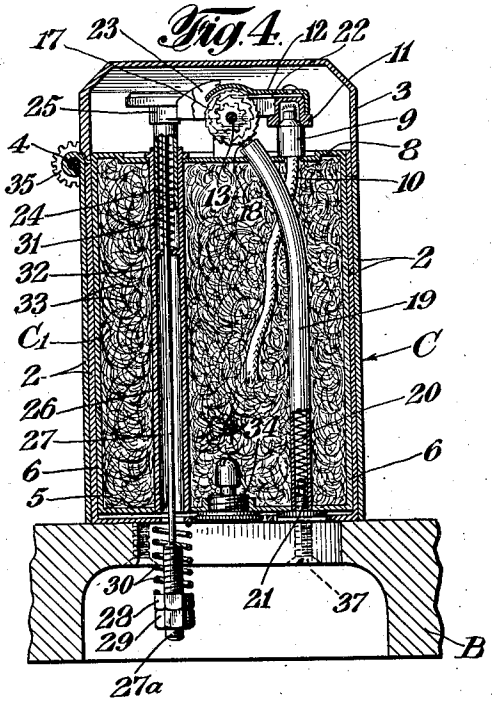


Fig. 5.

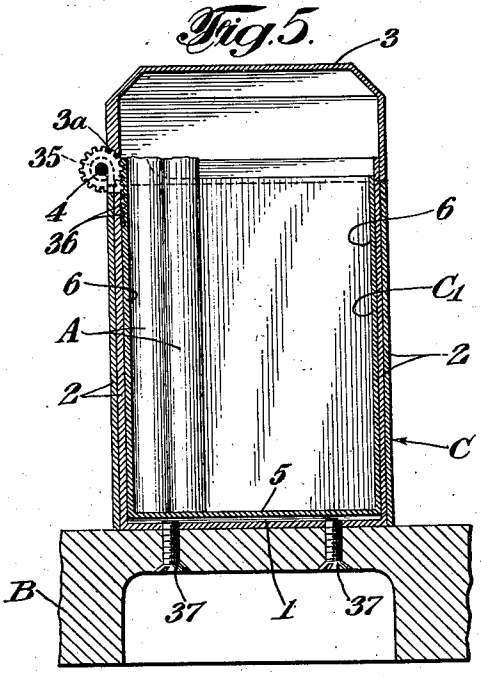


Fig. 6.

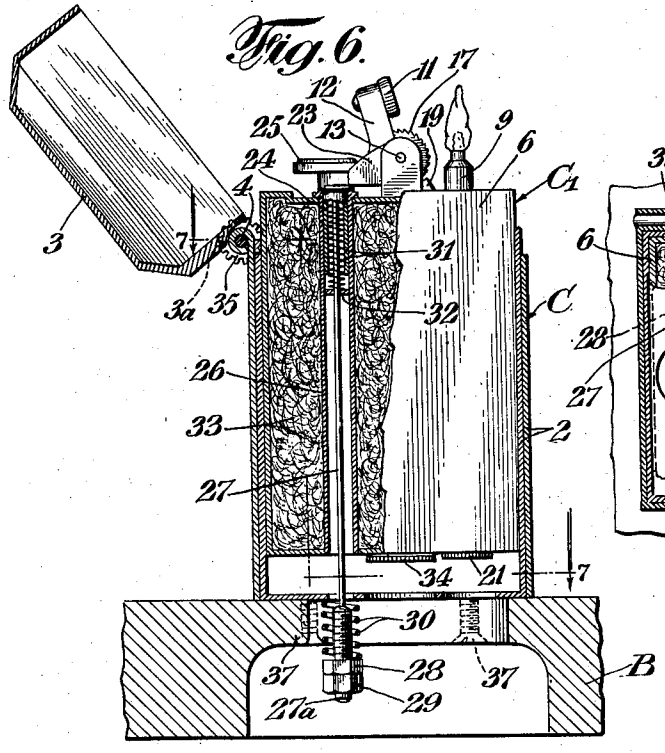
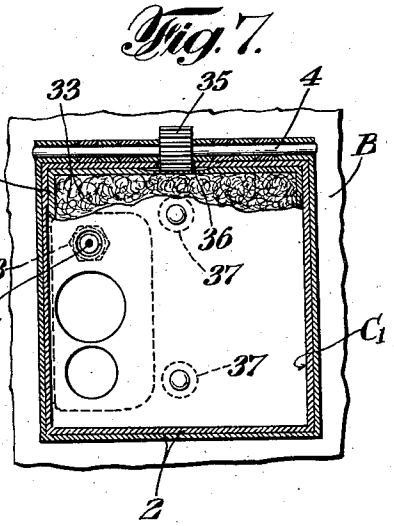


Fig. 7.



INVENTOR
Louis V. Aronson
BY
Ward, Crosby & Neal
ATTORNEYS

Patented July 9, 1935 2,007,629

UNITED STATES PATENT OFFICE

2,007,629

FLAME-PRODUCING MECHANISM AND ASSOCIATED CONTAINER

Louis V. Aronson, Newark, N. J., assignor to Art Metal Works, Inc., a corporation of New Jersey

Application February 3, 1930, Serial No. 425,396

11 Claims. (Cl. 206—41.4)

My invention relates to an arrangement or device including flame-producing mechanism and a receptacle for cigarettes, cigars, or the like, hereinafter generically termed "cigarettes".

My invention relates to an arrangement or device, as aforesaid, having novel characteristics whereby a single manual act, preferably, effects the production of flame and opens a cigarette compartment.

Further objects, advantages, and characteristics of my invention will become apparent from the following detailed description taken in connection with the accompanying drawings.

My invention resides in the arrangement, device, features of construction and combination of parts of the character hereinafter described and claimed.

For an illustration of one of the many forms of my invention, reference is to be had to the accompanying drawings, in which:

Fig. 1 is a perspective view of an arrangement or device constructed in accordance with my invention;

Fig. 2 is a transverse horizontal sectional view taken substantially on the line 2—2 of Fig. 1 and looking in the direction of the arrows;

Fig. 3 is a vertical sectional view, partly in elevation, and is taken on the line 3—3 of Fig. 2;

Fig. 4 is a vertical sectional view, partly in elevation, and is taken on the line 4—4 of Fig. 2;

Fig. 5 is a vertical sectional view, partly in elevation and is taken on the line 5—5 of Fig. 2;

Fig. 6 is an elevational view, partly broken away, and showing the cover member in open position; and

Fig. 7 is a horizontal sectional view, partly in plan and partly broken away, and is taken on the line 7—7 of Fig. 6.

Referring to the drawings, C represents an outer casing or housing having a bottom wall 1 from which suitable side wall structure upstands. In the example shown although not necessarily, each side wall comprises side-by-side members 2, 2, all of the side walls and the bottom wall being suitably joined together to form the aforesaid casing C which may be of square, rectangular or other suitable configuration and the inner side wall members of which may extend somewhat above the outer side wall members, if desired.

The casing C is adapted to be covered by a suitable cover member 3 which, as shown, is mounted for pivotal movement on one of the casing side walls. The pivotal connection may be effected in any suitable manner. As illustrated, the cover member 3, along one lower edge thereof and the upper edge of that side wall to which connection is to be effected are provided with spaced, perforated ears, all of said ears being disposed in alinement and having a rod or member 4 passed therethrough.

Preferably and as shown, the cover member 3 is of receptacle-like configuration and the horizontal, cross-sectional configuration is substantially the same as that of the casing C, the arrangement preferably being such that the lower surface of the cover member 3 rests upon the upper surface of the outer side wall members 2 and telescopes the upper sections of the inner side wall members 2.

In the form of my invention herein illustrated, an inner casing C1 is slidably disposed within the casing C. The casing C1 comprises a bottom wall 5 from which the side walls 6 upstand, the latter, preferably, being substantially the same in height as the side wall members 2 of the outer casing. The horizontal, cross-sectional configurations of the casings C and C1 should be similar, the horizontal cross-sectional area of the casing C1 being sufficiently smaller than that of the casing C to permit the former to be freely slidable in the latter.

In accordance with a preferred form of my invention, the aforesaid inner casing C1 is formed with side-by-side compartments as illustrated particularly in Fig. 3, one of said compartments serving as the fuel chamber for suitable pyrophoric lighting mechanism and the other of said compartments serving as a chamber utilizable for storing a plurality of cigarettes A.

To form the aforesaid compartments, the casing C1 may be provided with a dividing wall 7 upstanding from the bottom wall 5 thereof and connected to opposite side walls thereof as illustrated in Fig. 2. Accordingly, the bottom wall of the fuel receptacle is constituted by a section of the bottom wall of casing C1, a top wall 8 being provided for said fuel receptacle. The casing C1 in that region thereof defining the cigarette compartment is open at its top so that cigarettes may freely be removed therefrom when the cover member 3 is elevated as hereinafter described.

In the form of my invention shown, the flame-producing mechanism is of the pyrophoric type and may be of any suitable character such, for example, as is well known to the art and herein shown as comprising a wick tube 9 upstanding from the top wall 8 and having a wick 10 extending therethrough to the interior of the fuel re-

ceptacle and projecting slightly thereabove as is customary in the art.

A snuffer cap 11 coacts with the upper end of wick tube 9 and is carried by a lever or snuffer-carrying member 12 pivoted on a member 13 supported by spaced standards 14, 14 upstanding from the top wall 8. Spaced pinions 15, 15 are rotatable about the axis defined by member 13 and these pinions may be secured, respectively, to exterior surfaces of the respective depending side walls of the lever 12. Disposed between said last named side walls is a ratchet wheel 16 and a wheel 17 having a serrated or roughened peripheral face, the wheels 16 and 17 being connected together for rotatable movement as a unit about the member 13 as an axis. A suitable pyrophoric element 18 projects from the upper open end of a tube 19 extending from the lower wall of casing C1, through the fuel receptacle and slightly above the upper wall 8 of the latter. The tube 19 carries a helical spring 20 detachably retained therein in any suitable manner, as by a cap 21 having the shank thereof threaded into the lower end of tube 19, said cap 21 retaining the spring 20 under compression whereby said pyrophoric element 18 is biased into engagement with the outer face of the serrated wheel 17. As illustrated, the bottom wall 1 of said casing C is provided with an aperture permitting ready removal of said cap 21.

When it is desired to produce flame, the lever 12 is swung counter-clockwise, Fig. 4, to separate the snuffer cap from the wick tube 9. Such actuation of the lever 12 is adapted to impart a step of rotative movement to the wheels 16 and 17 and, for this purpose, mechanism of any suitable character may be utilized. To this end and as herein illustrated, a resilient member 22 of steel or the like may be disposed interiorly of the lever 12 and, at one end, secured thereto in any suitable manner, said member 22, at its other and free end, coacting in a pawl-like manner with the ratchet wheel 16.

Mechanism of any suitable type may be utilized for swinging the lever 12 counter-clockwise, Fig. 4. If desired and as herein illustrated, there may be thus utilized a pair of rack members 23, 23 meshing, respectively, with the pinions 15, 15, said rack members terminating in a member or sleeve 24, at the upper end of which, if desired, there may be disposed suitable knob structure 25. The sleeve 24 is slidably disposed within an open-ended tube or cylinder 26 extending through the fuel receptacle.

Connected to the rack members 23, 23 or to the knob structure 25 in any suitable manner is a rod or stem 27 depending through the tube 26 and extending below the lower wall 5 of casing C1 and also below the lower wall 1 of casing C in which a suitable hole or perforation is provided for the purpose just stated. The stem 27 comprises a lower threaded section 27a receiving a spring-positioning nut 28 and a locking nut 29 coactable with said nut 28, a suitable helical spring 30 being disposed between the casing wall 1 and the nut 28 which may be adjusted as desired to control the tension of said spring 30.

A second helical spring 31 may encircle the stem 27 at and adjacent the upper end thereof, said spring 31 being disposed within the sleeve 24 and coacting at its upper end with the interior surface of the knob structure 25 and at its lower end with a transverse member 32 positioned within and secured to the tube 26, the stem 27 being freely slidable through said transverse member 32.

Fuel of any suitable character, either semi-solid, liquid or the like may be introduced interiorly of the fuel receptacle which, if desired, may contain a mass of suitable absorbent material 33. For thus introducing fuel into the fuel receptacle, the bottom wall thereof may be provided with an opening into which is detachably secured a threaded plug 34, the bottom wall 1 of casing C having an opening permitting insertion and removal of said plug 34 from the opening therefor in the bottom wall of the fuel receptacle.

In accordance with a preferred form of my invention, movement of cover member 3 from the position shown in Figs. 4 and 5 toward and/or into the position shown in Fig. 6 is adapted to elevate or slide the inner casing C1 with respect to the outer casing C. The mechanism for attaining this end may assume any one of a variety of suitable forms. As herein illustrated, a pinion 35 is thus utilized, said pinion 35 being rotatable about an axis defined by the member 4 and secured to the cover member 3 for movement therewith in any suitable manner such, for example, as by the provision of a locking lug or member 3a, Figs. 5 and 6, on the cover member 3 which is disposed between adjacent teeth of said pinion 35.

As shown, the pinion 35 is arranged approximately midway between opposite side walls of the casing C1 and extends through a suitable slot provided in the adjacent pair of side walls 2 of casing C so that it meshes with rack or gear teeth 36 formed on the exterior surface of the adjacent side wall 6 of the casing C1.

Normally, the parts are positioned as illustrated in Figs. 1, 2, 3, 4 and 5. That is, the casing C1 is in its lowermost position and the cover member 3 is in closed position where it covers the pyrophoric lighting mechanism, the cigarette receptacle and the cigarettes therein. At this time, the springs 30 and 31 are as illustrated in Fig. 4, the spring 30 being in expanded or normal condition, or substantially so whereas the spring 31 is tending to expand and, therefore, holds the sleeve 24 in its upper position to thereby cause the snuffer cap 11 to be seated upon the wick tube 9.

In operation, the cover member 3 is suitably manipulated, as by grasping the same by one hand and swinging it in a counter-clockwise direction, Figs. 4 and 5. In so doing, the pinion 35 is rotated and, due to the meshed relation thereof with the gear teeth 36, the casing C1 is caused to slide with respect to the casing C so that it may come into the position shown in Fig. 6, if desired. By thus swinging the cover member 3 to open position, the open end of the cigarette compartment is exposed and one or more cigarettes A may be removed therefrom as desired.

As the cover member 3 is swung counter-clockwise, Figs. 4 and 5, as described above to elevate the casing C1, stem 27 tends to move upwardly therewith since, as stated, the upper end thereof is connected to the knob 25, the latter forming a part of the lighting mechanism which is carried by the casing C1. The spring 30, however, is of relatively great strength and, to a great degree, resists and prevents such upward movement of the stem 27. Therefore, it results that the sleeve 24 is caused to move downward with respect to the tube 26 from the position shown in Fig. 4 to the position shown in Fig. 6 and compressing the spring 31. The rack members 23, 23 partake of similar downward movement to thereby rotate the pinions 15, 15 and the lever 12 in a counter-

clockwise direction, Fig. 4, so that the lever 12 and the snuffer cap 11 may come to the position shown in Fig. 6. Due to engagement of the member 22 with the rack wheel 16, a step of rotative movement is imparted to the wheel 17 when the lever 12 is moved as just described. Accordingly, due to coaction of the wheel 17 with the pyrophoric element 18, a shower of sparks are produced and these, coming into contact with the fuel at the upper end of wick 10, cause the production of a flame such as illustrated in Fig. 6.

It results, therefore, in accordance with my invention that a single act, namely, movement of cover member 3 as described, opens the cigarette compartment so that cigarettes may be removed therefrom and causes the production of flame for ignition of the cigarette.

In the form of my invention herein shown, the spring 30 to great extent and the spring 31 to less extent, acting through the various parts as will be obvious, tend to return the cover member 3 to closed position and this automatically occurs when said cover member 3 is sufficiently freed from restraint. Accordingly, the hand of the user may be removed from the cover member 3 and the same will automatically return to closed position; at the same time, the spring 31 expands, due to descent of casing C1 under the control of spring 30, and elevates the knob structure 25 and rack members 23, 23 into the position shown in Fig. 4. As a result, the snuffer cap 11 is again seated upon the wick tube 9 and the flame extinguished, movement of the wheel 17 not occurring at this time because the member 22 idles with respect to the ratchet wheel 16.

As herein illustrated, the apparatus constructed in accordance with my invention is adapted for table or desk use and, accordingly, it may be supported on a suitable base B, screws or the like 37 being utilized to secure said base B and casing C together. As illustrated, the base B may be provided with a depression directly below the casing C and such depression, in part at least, should extend through the base as an aperture receiving the end of stem 27 and the parts carried thereby, and also permitting removal of cap 21 and plug 34 when desired. If desired, the base B, as shown particularly in Fig. 1, may comprise a lateral extension having a depression 38 therein serving as an ash receiver, for example, or for the reception of any suitable receptacle as may be desired.

It shall be understood that my invention is not to be limited to mechanism of the character herein described and illustrated and, particularly, it shall be understood that my invention is not to be limited to mechanism necessarily adapted or intended for support by a desk, table or other surface. As well, my invention is readily susceptible of incorporation in devices intended for portable or other use particularly such as may be carried about in a garment pocket, hand bag or the like.

While the invention has been described with respect to a certain particular preferred example which gives satisfactory results, it will be understood by those skilled in the art after understanding the invention, that various changes and modifications may be made without departing from the spirit and scope of the invention and it is intended therefore in the appended claims to cover all such changes and modifications.

What is claimed as new and desired to be secured by Letters Patent is:

1. The combination with telescopically related casings, and a cover member for said casings, of flame-producing mechanism carried by the inner casing, said inner casing comprising a compartment for cigarettes, means whereby movement of said cover member moves said casings with respect to each other, and means whereby relative movement of said casings effects the production of flame by said mechanism.

2. The combination with telescopically related casings, of pyrophoric spark-producing means and a fuel receptacle in the inner casing, said inner casing comprising a cigarette compartment, a cover member for said casings, and means responsive to movement of said cover member for transmitting energy therefrom to effect relative movement of said casings and to automatically actuate said spark-producing means.

3. The combination with telescopically related casings, of pyrophoric spark-producing means and a fuel receptacle in the inner casing, said inner casing comprising a cigarette compartment, a pivoted cover member for said casings, and means responsive to elevation of said cover member for transmitting energy therefrom to effect relative movement of said casings and to automatically actuate said spark-producing means.

4. In combination, telescopically related casings, a cover member for said casings, a connection for transmitting energy from said cover member to said inner casing whereby opening of said cover member elevates said inner casing, said inner casing comprising pyrophoric lighting mechanism, and means for automatically operating said lighting mechanism in response to said opening of said cover member.

5. In combination, telescopically related casings, flame-producing mechanism carried by said inner casing and movable therewith, said mechanism comprising a wick, pyrophoric means for producing sparks to ignite fuel at said wick, and means for operating said pyrophoric means, means for elevating the inner casing with respect to the outer casing, and means whereby elevation of said inner casing actuates said operating means.

6. In combination, telescopically related casings, flame-producing mechanism carried by said inner casing and movable therewith, said mechanism comprising a wick, pyrophoric means for producing sparks to ignite fuel at said wick, means for operating said pyrophoric means, and a spring for returning said operating means to a normal position, means for elevating the inner casing with respect to the outer casing, and means whereby elevation of said inner casing actuates said operating means and compresses said spring.

7. In combination, telescopically related casings, flame-producing mechanism carried by the inner casing and comprising a wick, pyrophoric means for producing sparks to ignite fuel at said wick, and means for operating said pyrophoric means, gear means for elevating the inner casing with respect to the outer casing, a casing cover member for operating said gear means, and means whereby elevation of said inner casing actuates said operating means.

8. In combination, telescopically related casings, flame-producing mechanism carried by the inner casing and comprising a wick, pyrophoric means for producing sparks to ignite fuel at said wick, and means for operating said pyrophoric means, gear means for elevating the inner casing with respect to the outer casing, a casing cover member for operating said gear means, and means whereby elevation of said inner casing actuates

said operating means, said last named means comprising a spring-controlled member tending to bias said inner casing toward its lower position.

9. In combination, a base, a substantially vertical casing upstanding from said base, said casing defining vertical compartments disposed in side-by-side relation, one of said compartments being open at its top and adapted to receive a plurality of cigarettes, another of said compartments being a fuel casing, pyrophoric lighting mechanism carried by said fuel casing, and means for operating said lighting mechanism, said means comprising a mechanical connection including a member secured to said base.

10. In combination, a base, a substantially vertical casing upstanding from said base, said casing defining vertical compartments disposed in side-by-side relation, one of said compartments being open at its top and adapted to receive a plurality of cigarettes, another of said compartments being a fuel casing, pyrophoric lighting mechanism carried by said fuel casing, and means for operating said lighting mechanism, said means comprising a cover for said casing and a mechanical connection including a member secured to said base.

11. In combination, a base, a substantially vertical casing upstanding from said base, said casing defining vertical compartments disposed in side-by-side relation, one of said compartments being open at its top and adapted to receive a plurality of cigarettes, another of said compartments being a fuel casing, pyrophoric lighting mechanism carried by said fuel casing, and means for operating said lighting mechanism, said means comprising a cover for said casing and a second casing secured to said base and in which said first named casing is slidable.

LOUIS V. ARONSON.